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The role of mothers in meeting nutritional needs of children with grade II dengue hemorrhagic fever

Peran ibu dalam memenuhi kebutuhan gizi anak dengan demam berdarah dengue derajat II

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Abstract

Grade II Dengue Hemorrhagic Fever (DHF) in children often leads to symptoms, such as nausea, vomiting, appetite loss, extended hospital stay, and delayed recovery. Proper nutrition is essential for managing these symptoms and supporting recovery. Mothers play a critical role in fulfilling their children's nutritional needs. This study explored the role of mothers in meeting the nutritional needs of children with Grade II DHF in the Pediatric Ward at Meuraxa Hospital Banda Aceh municipality. Using a qualitative case study approach, data were collected from three mothers whose children were treated for two weeks, from admission to discharge, during the study period in August 2021. Data were gathered through interviews, observations, and medical records and then analyzed through thematic content analysis focusing on education, caregiving, and nurturing. The results showed that, while mothers followed hospital feeding schedules, they faced difficulties in encouraging their children to eat because of their low appetite. They fostered a supportive environment using storytelling and praise but avoided discussing meal nutrition, assuming that their children were too young to understand. In conclusion, mothers demonstrated strong caregiving. Challenges include limited nutritional knowledge and difficulty in making the food appealing. Enhancing maternal knowledge and feeding strategies can support faster recovery of children with DHF.

Keywords: DHF, mother's role, nutrition for children

Abstrak

Demam Berdarah Dengue (DBD) derajat II pada anak sering menimbulkan gejala mual, muntah, dan hilangnya nafsu makan yang memperpanjang masa rawat inap di rumah sakit dan memperlambat pemulihan. Nutrisi yang tepat sangat penting untuk mengatasi gejala ini dan mendukung proses pemulihan. Ibu berperan penting dalam memenuhi kebutuhan nutrisi anak mereka. Penelitian bertujuan untuk mengeksplorasi peran ibu dalam memenuhi kebutuhan nutrisi anak yang dirawat dengan DBD derajat II di Ruang Anak, Rumah Sakit Meuraxa Kota Banda Aceh. Menggunakan pendekatan studi kasus kualitatif, data diperoleh dari tiga ibu yang anaknya dirawat selama dua minggu, dari saat masuk hingga keluar, selama periode penelitian pada Agustus 2021. Data dikumpulkan melalui wawancara, observasi, dan catatan medis, kemudian dianalisis secara konten tematik yang berfokus pada edukasi, perawatan, dan pengasuhan. Hasil, meskipun para ibu mengikuti jadwal pemberian makan rumah sakit, mereka mengalami kesulitan dalam membujuk anaknya untuk makan karena nafsu makan yang rendah. Mereka menciptakan suasana yang mendukung melalui bercerita dan pujian, tetapi tidak menjelaskan nutrisi makanan yang diberikan karena menganggap anak mereka terlalu kecil untuk memahaminya. Kesimpulan, para ibu menunjukkan perawatan yang baik. Tantangan yang dihadapi adalah pengetahuan nutrisi yang terbatas dan kesulitan dalam membuat makanan yang lebih menarik. Meningkatkan pengetahuan ibu dan strategi pemberian makan dapat mempercepat pemulihan anak dengan DBD

Kata Kunci: DBD, peran ibu, nutrisi pada anak

Introduction

Dengue Hemorrhagic Fever (DHF) is a severe form of dengue fever characterized by high fever, bleeding, and risk of organ failure, particularly in children (WHO, 2024; Yuill, 2023). As a major health concern in tropical regions, DHF poses significant challenges to pediatric care, particularly in moderate (Grade II) and severe cases (Kapı et al., 2015). Several studies have explored the relationship between nutritional status and dengue severity; however, their findings have been inconsistent (Haypheng et al., 2022; Trang et al., 2016). Malnutrition may influence dengue severity through its effects on the host immune response (Maneerattanasak & Suwanbamrung, 2020).

Malnutrition remains prevalent among hospitalized children, highlighting the importance of nutritional support in improving patient outcomes (Kapçı et al., 2015). Hospital malnutrition often arises from a loss of appetite, a common symptom of dengue, rather than from the disease itself. In patients with DHF, symptoms such as nausea, vomiting, and a significant reduction in appetite can severely limit their nutritional intake, leading to weakness, fatigue, and delayed recovery (Aini et al., 2014).

Nutrition plays a crucial role in the recovery of DHF children. Proper nutrition supports the immune system, aids tissue repair, and replenishes lost nutrients, which are key factors in disease management. For children recovering from DHF, maintaining hydration and providing nutrient-rich foods are critical to combat dehydration, improve platelet counts, and prevent further complications. However, malnutrition can hinder recovery and increase the risk of complications, such as prolonged fever and hemorrhagic manifestations (Murimi & Moyeda-Carabaza, 2017; Langerman & Ververs, 2021; WHO, 2021). Addressing nutritional deficiencies is essential for preventing further weight loss and disease progression (Irianto, 2014; Ester & Supartini, 2019).

The role of mothers is especially important in managing the nutritional needs of their children, as they are responsible for ensuring that meals are both healthy and appealing while also creating a positive and stress-free mealtime environment (Gray, 2022). They manage fluid intake, prepare meals, and ensure that their children receive appropriate food despite the challenges posed by the illness. In addition to their caregiving roles, mothers also serve as educators, teaching their children the importance of nutrition at an early age. However, this role is often overlooked because many mothers lack the necessary knowledge and skills to effectively manage their children's diet during illness (WVI, 2024).

Mothers face significant barriers to fulfilling these nutritional needs, including limited access to resources, financial constraints, and a lack of knowledge regarding the specific dietary requirements of children with DHF (Elhady et al., 2023). The unique challenges mothers face in managing food intake during illness, such as understanding proper nutrition, overcoming a child's reluctance to eat, and addressing poor food tolerance, remain underexplored in this specific context (Bimpong et al., 2020). Diet management for dengue patients is often imprecise, with food selection requiring careful management due to poor food tolerance and potential unconsciousness commonly accompanying the illness (Poornima et al., 2021).

Although the importance of maternal involvement in children's nutrition is widely recognized, research specifically focusing on mothers' roles during hospitalizations, particularly in the context of Grade II DHF, remains limited. Existing studies have emphasized the significance of maternal involvement in feeding practices, as mothers are often the primary caregivers who can significantly influence recovery outcomes through proper nutrition (Setyaningsih, 2021; WVI, 2024). This study aimed to explore how mothers carry out their roles as educators, caregivers, and nurturers in meeting the nutritional needs of children hospitalized with Grade II DHF.

Methods

A qualitative case study approach was employed to investigate real-life situations (Ahmadi & Rose, 2014), comprehensively exploring the role of maternal involvement in meeting the nutritional needs of children with Grade II DHF in the Pediatric Ward at Meuraxa Hospital Banda Aceh municipality.

The participants in this study consisted of three mothers, selected based on the following inclusion criteria: children aged 2,5 3,5 years diagnosed with Grade II DHF, who were hospitalized for two weeks, from admission to discharge, during the study period in August 2021. All mothers were housewives who spent 24 hours a day caring for their children in the hospital ward and voluntarily participated in the

study. The selection of these participants aligns with the exploratory nature of qualitative research, which aims to gain in-depth insights rather than generalize findings.

Data were collected through in-depth interviews, participant observations, and clinical assessments to examine the roles of mothers as educators, caregivers, and nurturers. Semi-structured interviews focused on participants' perceptions of nutritional needs during hospitalization, their knowledge and practices related to nutrition, and the challenges faced in fulfilling these needs. Direct observations during hospitalization were used to assess maternal involvement in children's nutritional intake and care. Observers recorded feeding practices, caregiver-child interactions during mealtime, and how maternal roles were implemented. Clinical assessments included monitoring of dengue symptoms and signs, body weight, infusion of Ringer's lactate solution, laboratory results, and medical treatments administered during the care period.

The data analysis for this study was conducted using thematic content analysis, a method widely used in qualitative research to identify and analyze patterns (themes) within qualitative data. Thematic content analysis is appropriate for this study as it allows for in-depth exploration and identification of recurring patterns or themes related to the role of mothers in meeting the nutritional needs of children with Grade II DHF. The process of identifying, reviewing, and refining themes ensures a thorough analysis, with findings grounded in the mothers' experiences. To enhance validity, the researcher used triangulation through multiple sources (interviews, observations, and medical records) to ensure that the themes reflected a comprehensive view of the mothers' roles and member checking. Preliminary findings were shared with the mothers to verify whether the identified themes accurately reflected their roles in meeting their children's nutritional needs.

Ethical approval was obtained from the Health Research Ethics Commission of the Aceh Health Polytechnic, Ministry of Health (No.LB.02.03/008/2021). All participants provided informed consent before participating in the study.

Result and Discussion

Characteristics of the respondents

The data collected from the mothers included age, education level, occupation, and place of residence. The data for the children included age (in years), length of hospital stay (in days), body weight before and during treatment (in kilograms), food consumption, and the medical therapy administered. The characteristics of the respondents are summarized in Table 1.

Table 1. Characteristics of mother and children with DHF grade II in hospital

Characteristics	Informant Code		
	INF-1	INF-2	INF-3
Mother:			
Age (year)	49	34	29
Education level	Senior High School	Senior High School	Junior High School
Occupation	Housewife	Housewife	Housewife
Residence	Lhoknga	Setui	Keutapang
Children with DHF:			
Age (year)	3,1	2,9	2,5
Length of stay (day)	6	4	2
Weight before treatment (kg)	10	9	12
Weight during treatment (kg)	9	7,4	11
Food diet	Soft food	Soft food	Soft food
Medicine therapy	IVFD RL Domperidone Ondasentron Ranitidine PCT Drip	IVFD RL Domperidone Ondasentron Ranitidine PCT Drip	IVFD RL Domperidone Ondasentron Ranitidine PCT Drip

Notes: INF=Informant; DHF=Dengue Haemorrhagic Fever; kg=kilogram; IVFD RL=Intravenous Fluid Drip Ringer Lactose; PCT=Paracetamol

Demographic and Clinical Characteristics

Table 1 shows that the mothers' ages ranged from 29 to 49 years, with an average of 37,3 years. All mothers were housewives; 66,7% had Senior High School education, while 33,3% had completed Junior High School. Most participants (66,7%) resided in the Banda Aceh municipality. The children's ages ranged from 2,5 to 3,1 years, averaging 2,8 years. Hospital stays varied from 2 to 6 days, with an average of 3 days. Before treatment, the children's average weight was 10,3 kg, which dropped to 8,5 kg during treatment, resulting in an average weight loss of 1,8 kg. All children received soft food during treatment and were prescribed medications, including Domperidone, Ondansetron, Ranitidine, and Paracetamol. Intravenous fluids were administered at admission to address hydration issues.

The following analysis can be made regarding how factors such as the mother's age, education, and place of residence, as well as the child's age, weight (before and during treatment), and length of hospital stay, may influence the child's nutritional status. A mother's age might influence her caregiving practices, with older mothers potentially having more experience in managing their child's illness and nutritional needs.

A higher level of education in mothers is often associated with better knowledge of nutrition and health practices, potentially improving a child's dietary intake during illness. Mothers living in urban areas might have better access to healthcare and nutritional resources than those living in rural settings, affecting their child's recovery and nutritional status. Younger children may have more difficulty in communicating their symptoms or preferences, thus requiring more active parental involvement in feeding and care. Weight changes can reflect the severity of the illness and the effectiveness of nutritional management. Significant weight loss during treatment could indicate challenges in maintaining an adequate nutritional intake. A longer stay might indicate more severe illness or slower recovery, which could further impact the child's nutritional status due to prolonged illness-related anorexia or other complications.

Collectively, these factors highlight the importance of targeted nutritional interventions and support for mothers to manage their children's recovery from DHF.

Dietary and Medical Treatment

The children were provided with soft foods, commonly recommended for patients with DHF, to minimize complications such as nausea and gastrointestinal discomfort. The prescribed medications, including intravenous fluids (IVFD RL), Domperidone, and Ondansetron, addressed hydration, fever, nausea, supported recovery, and improved nutrient absorption.

Mothers with higher educational levels and older age demonstrated a greater capability to ensure proper nutrition. The child's initial weight and duration of hospitalization reflected illness severity, directly influencing nutritional requirements. Proper hydration through intravenous fluids and adequate feeding practices prevent malnutrition and support immune function, which are essential for recovery.

Cultural and environmental factors, including residential locations (e.g., Lhoknga, Setui, Keutapang), influence healthcare and nutritional resource access and shape children's nutritional recovery. Environmental factors**,** such as access to healthcare, socioeconomic status, and food ability, significantly influence how well mothers care for their children during illness. According to Thompson et al. (2021), in regions with poor access to healthcare resources, mothers often struggle to meet the dietary needs of their children with DHF, which affects their recovery.

This study found that all children had nutritional deficiencies related to decreased appetite and were provided soft food as part of their diet. According to previous studies, the patient reported experiencing nausea but did not vomit (Daruki, 2020). The study revealed that most mothers possessed a low level of knowledge regarding balanced diets, with only 10,6% having a higher level of knowledge. Notably, 39,8% of mothers exhibited moderate knowledge. Factors such as maternal age (26-30 years) and educational level are associated with lower knowledge levels (Minani et al., 2024).

One factor that influences mothers' experiences of malnutrition is low economic status (Kassaw et al., 2020). Overweight children with dengue should be closely monitored for early signs of severe dengue infection (Maneerattanasak & Suwanbamrung, 2020). Nutritional problems in children with

DHF can be partially resolved within 3 × 24 h of intervention; however, ongoing efforts are required to fully meet their nutritional needs. Nutritional interventions aimed at interventions aimed at increasing children's appetite, maintaining ideal body weight, and improving physical condition include observing weight, encouraging warm food, involving family members in providing preferred foods (when no contraindications exist), offering small and frequent meals, and collaborating with nutritionists (Huda, 2016; Ikhwani, 2019).

A comprehensive approach that links maternal characteristics, child health status, and treatment plans to nutritional outcomes is essential. Understanding these factors will help to develop effective strategies for improving care and supporting recovery during hospitalization for DHF.

The Mother's Role in Meeting Nutritional Needs of Children with Grade II DHF

Interviews and observations regarding mothers' roles in fulfilling their children's nutritional needs are summarized in Table 2.

Table 2. Description of informants' answers and observation results about the role of mothers in fulfilling nutrition in children with DHF grade II

Mother's Role	Informant Code (INF)	Informant's Response	Observation Results
Educating	INF-1	"I tell my child that the food given is healthy and helps them recover quickly and grow strong."	Feeds while communicating
	INF-2	"I never explained anything because my child is still young and doesn't understand."	Just feeds without explaining
	INF-3	"I don't explain anything because my child is still young and doesn't understand."	Feeds with minimal communication
Caring	INF-1	"Often talks and tells stories about cartoon films that children like; tells children they are smart and will become great doctors."	Persuades children during the eating process
	INF-2	"Uses cellphone to play blessings; sometimes sings and tells children they are beautiful, kind, and sweet."	Does not persuade children during eating
	INF-3	"Plays YouTube videos with toy car shows; persuades children by saying they will get an injection from the nurse if they don't eat."	Does not persuade children during eating
Nurturing	INF-1	"I transferred the food to a cartoon plate. The food was provided three times a day, and I always offered it. My child usually ate 4-5 spoonfuls before feeling nauseous."	The food was served again, but the portion was not completely finished
	INF-2	"I never served the food again because it was complicated. I always gave the food when it was delivered to the hospital, but it was often not finished due to my child's nausea."	The food was not served again, and the portions were not completely

The mother's role in educating nutrition

The findings revealed varying levels of maternal engagement in educating children on nutrition. One mother explained to her child that consuming healthy food would aid recovery and strength. In contrast, the other two mothers refrained from offering explanations, citing their children's young age and perceived inability to understand. Observations showed that one mother actively communicated during feeding, another fed her child without interacting, and the third mother provided minimal communication.

Children often face challenges in eating during both the health and illness phases. Studies have reported inconsistent links between nutritional status and dengue outcomes, highlighting the need for further research to clarify this relationship (Trang et al., 2016). The researcher noted that many mothers in this study did not fully embrace their role in providing nutrition education. The limited education of the participants, ranging from junior to senior high school, likely affected their capacity to deliver effective nutritional education. Research suggests that higher maternal education significantly enhances family nutrition by equipping mothers with better knowledge and practices.

These findings align with those of Wahyuningrum et al. (2023), who identified a strong correlation between maternal education and a reduced stunting risk in children. Similarly, Rachman et al. (2021) emphasized that maternal education improves family eating habits and children's comprehension of nutritional intake. Studies by Demilew et al. (2020) and Prasetyo et al. (2023) have demonstrated that nutrition education programs positively impact maternal knowledge, children's appetite, weight, and overall nutritional status. By learning to choose appropriate and safe foods and proper feeding practices, mothers can prevent nutritional deficiencies in their children.

Nutrition education programs can improve mothers' knowledge of fulfilling the needs of infants and toddlers (Muluye et al., 2020). Educating children on food types is essential for their development as it enables them to distinguish between healthy and unhealthy options. Mothers play a critical role in explaining the functions of different foods and provide a foundation for lifelong healthy eating habits. This role is particularly crucial during the toddler years, when nutritional needs are pivotal for growth. Furthermore, mothers must address their children's eating difficulties during illness. Parental education significantly influences parenting methods and ensures adequate nutritional fulfillment, thereby supporting recovery and overall health.

The mother's role in caregiving for nutrition

The results revealed that all mothers created a pleasant atmosphere during mealtimes by engaging their children through storytelling, singing, watching YouTube, or playing on their cell phones. Two mothers encouraged their children by complimenting them, while one used the fear of injections as a motivational strategy to persuade her child to eat with the aim of preventing fussiness. Observations indicate that only one mother actively persuaded her child, whereas the other two exhibited less engagement in direct persuasion.

All informants successfully provided a pleasant atmosphere for children during meals. This finding aligns with that of Harnanto and Rahayu (2016), who highlighted the importance of creating a positive eating environment through entertainment and playing to encourage children to eat. Mothers' attention and interaction are crucial in encouraging children to eat, especially toddlers, who may struggle with eating difficulties. Similarly, Yendi et al. (2017) found a relationship between maternal involvement in preschool children's nutrition and dengue hemorrhagic fever; mothers who accompanied their children during meals and encouraged them to eat had a significant effect ($p < 0,05$).

Mothers play an important role in meeting the nutritional needs of adolescents in terms of preparing food menus for children, processing food menus for children, presenting food menus for children, forming children's diets, and creating pleasant situations when eating (Setyaningsih, 2021). Mothers' nutritional knowledge is an essential factor in their ability to choose nutritious foods to feed their children and manage the available resources to provide food. Empowering mothers through nutrition education has been shown to effectively address poor feeding practices among children (Effendy et al., 2020). Nutrient-dense and easily digestible foods, such as soups and fruit juices, are particularly beneficial for children recovering from illnesses, helping to alleviate dehydration and electrolyte imbalances (Poornima et al., 2021).

Research has underscored the significance of maternal involvement and education in promoting children's nutrition and overall wellbeing. For instance, Demilew et al. (2020) highlighted the role of maternal education in improving dietary practices, whereas Rachman et al. (2021) demonstrated its impact in preventing malnutrition and supporting

recovery during illness. Nutrition education for mothers has also been linked to better selection of safe and appropriate foods, effectively preventing nutritional deficiencies in children (Muluye et al. 2020; Prasetyo et al. 2023). Empowering mothers through such programmes can lead to sustainable improvements in family nutrition and health.

The findings indicated that all mothers in this study effectively fulfilled their caregiving roles, as evidenced by the informants' responses about creating a pleasant environment that encouraged their children to eat. Typically, the informants were housewives, allowing them more time to understand and create a comfortable atmosphere for their children. In terms of persuasion, this study suggests that most mothers effectively perform their caregiving roles by using praise and maintaining engagement during meals. Additionally, the majority of mothers were over 30 years old, reflecting their accumulated caregiving experience. However, hospitalization is a stressful experience that can disrupt a child's comfort and appetite, posing challenges for meeting their nutritional needs. Theoretical frameworks indicate that creating a caring and stable environment during illness is critical for addressing these challenges.

The mother's role in nurturing nutrition

This study explored the role of mothers in nurturing their children's nutrition during illness, focusing on children with DHF. One mother in the study made a concerted effort to create a more engaging and appealing mealtime experience by moving food to her child's favorite eating space, often used in playgroup settings, and presenting it on cartoon-themed plates. By contrast, the other two mothers opted for simplicity, providing food directly from the hospital without making additional efforts to tailor it to their children's preferences. Despite the children frequently experiencing nausea and vomiting, all mothers ensured that their children ate three meals per day, following the hospital's schedule. Observations revealed that only one mother reserved food, whereas the others did not, and none of the children consumed the entire portion.

In terms of food presentation, many informants did not fully fulfill their nurturing roles. These findings contrast with those of Puspita et al. (2018), who emphasized the family's responsibility to ensure balanced nutrition and fluid intake during treatment, offering both hydration and appealing food options. The findings of this study align with those of Arfan et al. (2018), who reported that children with DHF often experience loss of appetite owing to high fever and vomiting, disrupting their nutritional intake.

Appropriate nutritional interventions are essential in these cases. A tailored diet, according to the patient's condition, ensures that necessary nutrients are provided despite the child's illness. Continuous monitoring of food intake, physical condition, and biochemical tests is crucial for recovery. Dewi et al. (2022) highlighted that nutrition education is provided each time food is delivered to a patient's room, with formal counseling conducted at the end of the monitoring period, ensuring both nutritional and medical needs are addressed to support recovery.

The study suggests that many informants did not adequately fulfill their nurturing roles, especially in food presentation, as evidenced by their reliance on hospital-provided meals without additional effort. Nonetheless, all informants adhered to the hospital's meal schedule, recognizing that the food served was part of the therapeutic care provided during the child's illness. This highlights the importance of continued support and education for mothers to provide the best care under such challenging circumstances.

During this critical stage, ensuring that toddlers receive sufficient nutrition is vital for their growth and development. Without proper nutrition, children may experience growth disorders, fatigue, and irritability, which can prolong recovery, particularly in those with DHF (WHO, 2021; CDC, 2021). Puspita et al. (2018) stressed the family's role in ensuring adequate nutrition and fluid intake in DHF patients, with Yendi et al. (2017) finding that 72% of mothers effectively supported their preschool children's nutrition. This involvement was correlated with better outcomes in children with DHF, in which maternal support during meals encouraged children to eat ($p < 0,05$).

Nutrition is crucial for children with DHF because deficiencies in proteins, carbohydrates, fat, minerals, vitamins, and water can hinder recovery and lead to complications (Irianto,

2014). Husnaniyah et al. (2020) emphasized the importance of mothers' knowledge in preparing suitable soft foods tailored to their children's preferences, ensuring both nutritional adequacy and recovery. This is particularly important in cases of Grade II DHF, where high fever, headaches, abdominal pain, and bleeding often reduce appetite and lead to dehydration. Appropriate nutrition and hydration are fundamental in the treatment process (WHO 2021; CDC 2021).

Mothers can enhance their child's nutrition by offering nutrient-dense foods such as fruits, vegetables, whole grains, and lean proteins, as well as ensuring adequate fluid intake to prevent dehydration. Emotional support also plays a vital role, as children and their families may experience stress and anxiety during serious illnesses. Caring and a supportive presence can significantly ease recovery.

However, this study also revealed that many mothers were not fully engaged in educating their children about the importance of nutrition, primarily because of their young age and limited understanding. Only one mother took significant steps in improving her child's understanding of nutrition. It is crucial for mothers to encourage and accompany their children during meals to ensure that they meet their nutritional needs, especially in serious conditions, such as DHF.

On a positive note, all mothers were successful in creating a nurturing and enjoyable atmosphere during mealtimes by incorporating activities such as storytelling, praying, singing, watching shows, and playing. Many mothers use praise and gentle persuasion to encourage their children to eat. However, some mothers were less proactive in customizing food presentations and often relied solely on the meals provided by the hospital. Nevertheless, all mothers made a commendable effort to ensure that their children ate according to the hospital's schedule, even though their children struggled with nausea, vomiting, and a reduced appetite. This underscores the need for ongoing support and education to help mothers provide the best possible care to their children.

Improving maternal education on nutrition and feeding strategies is crucial, as it can directly influence recovery times and reduce the long-term effects of malnutrition (Bimpong et al., 2020; WVI, 2024). Studies have shown that improving nutritional practices through education in dengue-endemic areas can significantly support the recovery of children. Nutritional guidance, particularly for diets rich in vitamins A and C, zinc, and iron, is essential for supporting blood health and tissue repair. These nutrients play key roles in healing and immune function. Vitamin C aids in wound healing, zinc supports immune function, and iron replenishes hemoglobin levels, which are often depleted in cases of hemorrhagic fever. Vitamin A is important for maintenance of mucosal integrity and immunity. Accessible dietary education and supplementation are vital for addressing these needs (Murimi & Moyeda-Carabaza, 2017; Langerman & Ververs, 2021; WHO, 2021).

This study underscores the crucial role of mothers in ensuring the nutritional needs of children diagnosed with DHF, particularly in Grade II cases. Maternal involvement in managing key nutritional aspects such as protein intake, hydration, and essential vitamins significantly influences recovery. Proteins support immune function and tissue repair, whereas adequate fluid intake prevents dehydration, which is a common complication of DHF. Smith et al. (2023) and Johnson et al. (2022) also emphasized the importance of these nutrients in reducing recovery times and improving pediatric outcomes.

Based on these findings, healthcare providers should integrate nutritional education for mothers, focusing on protein-rich foods, hydration, and vitamins as part of DHF recovery. This can be accomplished through targeted educational programs that empower mothers to manage their children's nutritional needs during hospitalization. Additionally, further research is needed to explore the specific nutrient deficiencies affecting DHF recovery in children and refine clinical guidelines for nutritional support.

Healthcare providers can take actionable steps to enhance maternal involvement in nutritional management of children with DHF.

a. Attending nutrition education programs: Providers should offer workshops for mothers focusing on the essential nutrients needed for DHF recovery. These programs can teach mothers how to select appropriate foods, plan meals, and address specific nutrient deficiencies (e.g., iron, vitamin C, and zinc) (Smith et al., 2023).
b. Working with a nutritionist: Mothers should collaborate with dietitians to create

customized meal plans that meet their children's nutritional needs during hospitalization, especially when the child faces dietary restrictions (Johnson et al., 2022).

c. Utilizing trusted sources of information: Encourage mothers to rely on credible health sources, such as hospital guidelines and government health agencies, ensure effective dietary management, and prevent misinformation. Community support groups can also facilitate better nutritional practices by sharing resources and experiences (Santos & Pinto, 2018).

Based on these recommendations, maternal involvement in the nutritional care of children with DHF can be significantly improved, ultimately enhancing recovery and reducing long-term effects of malnutrition.

Conclusion

The mother's role in ensuring proper nutrition for children with this illness during hospitalization is vital for their recovery and overall well-being. By collaborating closely with healthcare providers, monitoring children's dietary needs, and providing emotional support, mothers can significantly aid their children's recovery from this serious illness.

It is recommended that all mothers enhance their knowledge and skills, particularly concerning meal planning, to expedite their children's recovery from Grade II DHF. Further research is needed to conduct trials on various nutritional education interventions for mothers and feeding interventions to improve children's nutritional status.

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